

REMARKS

The present application has claims 1-14 pending. Claims 7, 8, 11 and 12 have been withdrawn from consideration, but not yet canceled. Applicants have herein amended claim 1 and added new claim 15.

Support for the amendment of claim 1 may be found in the specification on page 10, lines 9-11; page 11, lines 1-2; and page 12, lines 2-3; and in Figures 1 and 2. Support for new claim 15 may be found in the specification on page 1, line 28, to page 2, line 5, and on page 2, lines 10-12.

In the January 29, 2010 Office Action, the Examiner rejects the pending claims under 35 USC §112, first and second paragraphs, as allegedly failing to comply with the written description requirement and being indefinite. These rejections derived from the use of the term “isolated” in the claims. Applicants have herein deleted the term and believe the rejections should now be withdrawn.

The Examiner, in the January 29th Office Action, also again rejects claims 1-3, 5-6 and 13 under 35 USC §102(b) as allegedly anticipated by Steck (EP 0586461 B1). Additionally, the Examiner rejects claims 4, 9, 10 and 14 under 35 USC §103(a) as unpatentable over Steck in combination with secondary reference Fukuoka, *et al.* (JP 10-154521).

Applicants disagree with the Examiner’s position. Steck does not disclose the subject invention as set forth in amended claim 1 above -- that is, a catalyst-coated membrane with a protective film layer, wherein the protective film is in direct contact with said anode or cathode catalyst layer on the membrane so that a layer sequence of membrane-catalyst layer-protective film is formed in a region of each active area.

As indicated in prior responses, Steck discloses a different type of MEA technology -- one that is based on the use of gas diffusion electrodes (GDE). The electrodes of Steck are formed by applying catalysts to a carbon-based substrate. See Steck, pages 2-4, where it is stated that that electrodes 18 and 20 (in Figures 1 to 4) are "carbon fiber paper based electrodes" (Steck, page 4, line 46) and are "formed of porous electrically conductive sheet material such as carbon fiber paper" (Steck, page 2, line 16-17).

Accordingly, the GDE of Steck have at least two layers -- a catalyst layer (facing the membrane) and a carbon-based substrate attached to the surface of the catalyst layer facing away from the membrane. Steck applies his gasket material to the carbon-based substrate of the GDE. Thus, if the gasket material of Steck is considered the protective film of the claimed invention, then the protective film in Steck would be adjacent to, and in contact with, the carbon-based substrate -- not the catalyst. Amended claim 1 now requires that the protective film be in direct contact with the catalyst layer. Referring to Fig. 4 of Steck, the gaskets (or protective film) 12 and 14 are never in direct contact with the catalysts layers, as there is a carbon-based backing in between.

The present invention is directed towards catalyst-coated membranes (CCMs) in which the membrane is coated with catalyst layers on both sides. The protective film is then applied directly to the membrane -- not to a carbon-base substrate.

Moreover, amended claim 1 also now requires that a certain sequence of layers be present at the active area: membrane-catalyst layer-protective film. The structure of Steck does not meet this requirement either. The sequence of layers in the Steck structure is membrane-catalyst layer-carbon based substrate-protective film.

In light of the claim amendments and the remarks presented above, Applicants maintain that claim 1 is novel over, and not anticipated by, the disclosure of Steck. Further, since secondary reference Fukuoka also fails to disclose the requirements that the protective film be in contact with the catalyst layer or that the layer sequence membrane-catalyst layer-protective film exist at the active area, amended claim 1 is not rendered obvious by Steck, either alone or in combination with Fukuoka, and is patentable over these references. The remaining dependent claims contain all the limitations of claim 1 and thus are patentable over Steck and Fukuoka for the same reasons as outlined above for claim 1.

Applicants have also added new dependent claim 15, which requires that the claimed membrane does not contain a carbon-based substrate. The catalyst layers in the present invention are manufactured by coating ionomer membranes using catalyst inks. The catalyst inks are deposited directly on the membrane – they are not first applied to a carbon-based substrate such as in Steck. The claimed membranes of the present invention do not contain carbon-based substrates. Since Steck fails to disclose a CCM having catalyst layers but not having carbon-based substrates, the reference does not anticipate or render obvious claim 15.

In light of the amendments and remarks above, Applicants request reconsideration and withdrawal of the rejections under 35 U.S.C. §§102(b) and 103(a) set forth in the January 29, 2010 Office Action and respectfully solicit allowance of the present application.

No fee is deemed due for this amendment, other than the fee for the requested three-month extension of time and the fee for the accompanying RCE, which Applicants are concurrently filing with the present response. If any additional fees are due, or an overpayment has been made, please charge, or credit, our Deposit Account No. 11-0171 for such sum.

If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicants' attorney at the telephone number provided below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John J. Santalone", is written over a horizontal line.

John J. Santalone
Registration No.: 32,794
Attorney for Applicants
Direct Tel.: (914) 873-1956